

II. REMARKS

Before the amendments made herein, claims 1 to 105 were pending. Claims 50 to 104 have been canceled herein with out prejudice. Claims 106 to 119 have now been added herein. Accordingly, after the amendments made herein are entered, claims 1 to 49 and 105 to 119 will be pending.

A. Regarding the amendments

Claims 1 and 105 have each been amended to more clearly indicate that the recited polysaccharide binding domain containing composition includes at least two polysaccharide binding domains. The amendment is supported by the specification (referring to PCT WO 01/34091), for example, at page 5, line 36 to page 6, and line 2.

Claim 6 has been amended herein to correct a typo.

Claim 11 has been amended herein to more properly depend on claim 1 as amended herein.

New claim 106 is directed to at least two polysaccharide binding domains that are covalently coupled. The new claim is supported by the specification, for example, at page 5, line 36 to page 6, line 2.

New claims 107 to 11 and 113 to 117 are directed to where the polysaccharide binding domains are attached via a linker unit. The new claims are supported by the specification, for example, at page 28, line 28 to page 29, line 28.

New claims 112, 118 and 119 each further require that each domain be part of a protein. The new claim is supported by the specification, for example, at page 6, lines 3-5.

Because the amendments made herein are fully supported by the specification, no issue of new matter arises.

B. Regarding the election of species

As discussed above, all claims, as amended herein, require at least two polysaccharide binding domains. Accordingly, claims 1 to 49 and 105 to 119 read on this species.

C. Regarding the indefiniteness rejections

1. at least one desired . . . property

The claims are rejected under 35 U.S.C. § 112, second paragraph, as allegedly indefinite for reciting the phrase “at least one desired structural, chemical, physical, electrical and/or mechanical property.” More specifically, the Action alleges that there is no description of what these “desired” properties might be. Applicants respectfully traverse the rejection.

The specification provides numerous examples of each property. With this disclosure in mind, the skilled artisan can apprise the metes and bounds of the claims.

Examples of a “structural property” include a predetermined level of cross-links between polysaccharide structures of the polysaccharide containing material, a predetermined aggregation of the polysaccharide structures of the polysaccharide containing material and a predetermined surface texture of the polysaccharide containing material. Examples of a “chemical property” include a predetermined hydrophobicity, a predetermined hydrophilicity, a predetermined wet-ability, a predetermined chemical reactivity, a predetermined photochemical reactivity, a predetermined functionality and a predetermined surface tension. Examples of a “physical property” include a predetermined Young’s modulus, a predetermined strain

at maximum load, a predetermined energy to break point, a predetermined water absorbency, a predetermined swellability and a predetermined toughness.

Moreover, examples of an "electrical property" include a predetermined surface charge and a predetermined electrical conductivity. Finally, examples of a "mechanical property" include a predetermined tensile strength, a predetermined resistance to shear, a predetermined abrasion resistance, a predetermined frictional coefficient, a predetermined elasticity and a predetermined wet strength. See specification, for example, at page 5, lines 12-35.

In view of the disclosure of the specification, Applicants respectfully submit that the claims are not indefinite. Accordingly, Applicants respectfully request that this rejection be withdrawn.

2. before during and after

The claims are rejected under 35 U.S.C. § 112, second paragraph, as allegedly indefinite for reciting the phrase "before, during and/or after processing said polysaccharide structures into the polysaccharide containing material." More specifically, the Action alleges that there does not appear to be any particular distinction in these time periods and that the distinction between during and after would depend on the desired product. Applicants respectfully traverse the rejection.

The specification discloses that the paper manufacturing process conventionally includes four main steps: forming an aqueous suspension of cellulosic fibers, commonly known as pulp; adding various processing and paper enhancing materials, such as strengthening and/or sizing materials to the pulp slurry; sheeting the paper by pouring the resulting suspension over forming fabric which filters out most of the water and drying the fibers to form a desired cellulosic web; and post-treating the web after an initial drying of the paper to provide various desired characteristics to the resulting paper, including surface application of sizing materials to increase the dry strength of the paper. Page 1, lines 22-29. Given this context, for example, the

skilled artisan would know that "before" means before these four steps, "during" means during these four steps and "after" means after these four steps.

As another example, the specification further discloses that the processing of cellulosic material, as for example cotton fiber into a textile fabric, like paper making, also involves several steps: spinning of the fiber into a yarn; construction of woven or knit fabric from the yarn and subsequent preparation, dyeing and finishing operations. Page 2, lines 20-23. In this context, for example, the skilled artisan would know that "before" means before these disclosed steps, "during" means during these disclosed steps and "after" means after these disclosed steps.

In view of the disclosure of the specification, Applicants respectfully submit that the claims are not indefinite. Accordingly, Applicants respectfully request that this rejection be withdrawn.

D. Regarding the anticipation rejection

The claims are rejected under 35 U.S.C. § 102(b) as allegedly anticipated by Bates et al. (WO 97/07203), with Beguin et al. to support inherency. Applicants respectfully traverse the rejection.

The Action alleges that Bates discloses the use of cellulase and amylase to modify various polysaccharides at various stages of processing. The Action reasons that these polysaccharidase enzymes inherently comprise polysaccharide binding domains (citing Beguin for support).

In response, the claims have been amended herein to require that the polysaccharide binding domain composition includes at least two polysaccharide binding domains. By contrast, Bates does not teach or even suggest this feature. In view of this amendment, Applicants respectfully request that this rejection be withdrawn.

E. Regarding the obviousness rejection

The claims are rejected under 35 U.S.C. § 103(a) as allegedly obvious in view of Bates et al. (WO 97/07203), with Beguin et al. to support inherency. Applicants respectfully traverse the rejection.

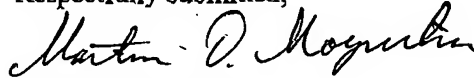
The Action alleges that Bates discloses the use of cellulase and amylase to modify various polysaccharides at various stages of processing. The Action reasons that these polysaccharidase enzymes inherently comprise polysaccharide binding domains (citing Beguin for support). While the Action concedes that Bates does not teach each material recited in claim 5 at every stage of processing, the Action alleges that each exemplification is expressly suggested.

In response, as discussed above, the claims have been amended herein to require that the polysaccharide binding domain composition includes at least two polysaccharide binding domains. By contrast, Bates does not teach or even suggest this feature. In view of this amendment, Applicants respectfully request that this rejection be withdrawn.

III. CONCLUSION

All of the issues raised in the Office Action have been addressed and are believed to have been overcome. Accordingly, it is respectfully submitted that all the claims under examination in the subject application are allowable. Therefore Applicants respectfully request a Notice of Allowance to this effect.

Respectfully submitted,



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Enclosed:
Petition for Extension of Time (1 Month).